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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,387	05/17/2005	Yoshio Yoshida	TIP 034	5809
23408 7590 03/31/2008 GARY C. COHN, PLLC 1147 NORTH FOURTH STREET UNIT 6E PHILADELPHIA, PA 19123				
EXAMINER				
SHEWAREGED, BETELHEM				
ART UNIT		PAPER NUMBER		
1794				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/535,387

**Applicant(s)**

YOSHIDA ET AL.

**Examiner**

Betelhem Shewareged

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicant's response filed on 01/09/2008 has been fully considered. Claims 1-20 are pending.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 7-12, 14 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US 2002/0176970 A1), as evidenced by AEROSIL Datasheet (Internet Print out), in view of Otani et al. (US 2001/0036552 A1).
4. Kobayashi discloses an ink jet recording sheet comprising a support, a colorant receiving layer applied on the support, and a boron compound applied onto the colorant receiving layer (abstract and [0090]). The boron compound is equivalent to the claimed treatment solution. The colorant receiving layer comprises a polyvinyl alcohol resin and a pigment containing a vapor phase process silica and a colloidal silica ([0068] and [0074]). The support is a resin coated paper [0174], wherein the coated resin is equivalent to the claimed undercoating layer. AEROSIL 300 is an example of the vapor phase process silica, and has a specific surface area of 300 m<sup>2</sup>/g, which is evidence by AEROSIL Datasheet. The amount of the vapor phase process silica is at least 50% by weight based on total pigment [0074]. The ratio of particles to binder is 1.5/1 to 10/1

Art Unit: 1794

[0085]. Kobayashi does not disclose that the colloidal silica has the claimed particle size and shape.

5. Otani teaches an ink jet recording material comprising a support and at least an outermost ink receiving layer having a binder and a pigment (abstract). The pigment can be colloidal silica having an average particle size of 30-500nm and a primary particle size of 5-60nm ([0018] and [0020], wherein the primary particles are linked up into chains to form a secondary particle (line 5 of [0020])).

6. Kobayashi and Otani are analogous art because they are from the same field of endeavor that is the ink jet recording sheet art. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the colloidal silica of Otani with the invention of Kobayashi in order to enhance ink absorbency and provide excellent color reproduction (see [0020] of Otani).

7. With respect to the value of specular gloss, the Office realizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredients. Therefore, the claimed effects and physical properties, i.e. the value of specular gloss would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

Art Unit: 1794

8. Claims 1, 3, 4, 6-13 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishima (US 6,183, 851 B1) in view of Otani et al. (US 2001/0036552 A1).
9. Mishima discloses an ink jet image recording medium comprising a support and a coating layer on the support (abstract). The coating layer comprises inorganic particles such as amorphous silica, gamma alumina and colloidal silica, and the particles may be used in combination (col. 8, lines 24-55). The support is a paper laminated with a polyolefin (col. 17, line 20), wherein the polyolefin is equivalent to the claimed undercoating layer. The coating layer further comprises a binder such as polyvinyl alcohol (col. 9, line 66). The ratio of particles to binder is disclosed in col. 11, line 48-62. Mishima does not disclose that the colloidal silica has the claimed particle size and shape.
10. Otani teaches an ink jet recording material comprising a support and at least an outermost ink receiving layer having a binder and a pigment (abstract). The pigment can be colloidal silica having an average particle size of 30-500nm and a primary particle size of 5-60nm ([0018] and [0020]), wherein the primary particles are linked up into chains to form a secondary particle (line 5 of [0020]).
11. Mishima and Otani are analogous art because they are from the same field of endeavor that is the ink jet recording sheet art. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the colloidal silica of Otani with the invention of Mishima in order to enhance ink absorbency and provide excellent color reproduction (see [0020] of Otani).

Art Unit: 1794

12. With respect to the value of specular gloss, the Office realizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredients. Therefore, the claimed effects and physical properties, i.e. the value of specular gloss would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

13. With respect to the amount of colloidal silica based on the total particles, the experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicants' claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. One of ordinary skill in the art would have been motivated to adjust the amount of colloidal silica in order to optimize ink receiving and printing properties of the layer. A prima facie case of obviousness may be rebutted, however, where the results of the optimizing variable, which is known to be result-effective, are unexpectedly good. *In re Boesch and Slaney*, 205 USPQ 215.

### ***Response to Arguments***

14. Applicant's argument is based on that Otani does not describe any colloidal silica meeting all three of applicant's characteristics, and all other ranges obtained by manipulating Otani's secondary and primary particle size ranges fall outside of

Art Unit: 1794

applicant's range of from 1.5 to 3.0, thus there is no specific teaching in Otani of a colloidal silica having both a secondary/primary particle size ratio of from 1.5 to 3.0 and a peanut-shaped configuration. This argument is not persuasive for the following reason. Based on the claimed primary particle size and the claimed ratio of the secondary particle size to the primary particle size, the calculated secondary particle size of the claimed pigment/colloidal silica is 15-300nm. The secondary particle size of the equivalent pigment of Otani is 30-500nm, wherein this value overlaps with Applicant's calculated secondary particle size value. Thus, since the claimed primary particle size overlaps with Otani's primary particle size, and the Applicant's calculated secondary particle size overlaps with Otani's secondary particle size, it is established that the claimed ratio of the secondary particle size to the primary particle size is included within the calculated ratio of the secondary particle size to the primary particle size of Otani, that is between 1.0 and 100. It is also noted that an actual ratio of less than 1 is not attainable.

15. Applicant further argued that Otani teaches away from making the specific selection made by the applicants. This argument is not persuasive because the invention of Otani is not limited to the preferred embodiment only.

16. Applicant also argued that the present application contains evidence of unexpected results that are achieved with the invention. This argument is not persuasive for the following reason. All evidences in Tables 1-4 have been considered. The Examiner has acknowledged that such evidence has been presented. The evidences show the importance of the secondary/primary particle size ratio and also of

Art Unit: 1794

having a peanut shape. However, the claimed primary particle size, shape and secondary/primary particle size ratio are taught by the reference of Otani. Even though Otani teaches broader range, the claimed secondary/primary particle size ratio of 1.5 to 3.0, which is within the range of Otani, is still taught by the reference. Furthermore, the reference(s) teaches all of the claimed ingredients including the claimed secondary/primary particle size ratio. Therefore, the claimed effects and physical properties, i.e. the value of specular gloss would implicitly be achieved by a composition with all the claimed ingredients.

17. For the above reasons claims 1-20 stand rejected.

### ***Conclusion***

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

19. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betelhem Shewareged whose telephone number is 571-272-1529. The examiner can normally be reached on Mon.-Fri. 8:00AM-4:30PM.
21. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
22. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BS  
March 27, 2008.

/Betelhem Shewareged/  
Primary Examiner, Art Unit 1794